

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-51 are pending, Claim 1, 2, 21, 34, 36, 40, 44, and 48 having been amended by way of the present amendment.

In the outstanding Office Action, the drawings were objected to. Claims 1-17, 19, 21-29 and 31-51 were rejected as being anticipated by Sato, (U.S. Patent 5,867,513); and the remaining claims were rejected as being obvious over Sato.

In reply, a Letter Submitting Drawing Sheets with replacement Figures 20 and 21 is filed herewith adding the label “Prior Art” to Figures 20 and 21.

Claim 1 stands rejected as being anticipated by Sato. Claim 1 is directed to an optical modulator that includes a first temperature sensing unit and a second temperature sensing unit. The second temperature sensing unit is disposed adjacent to an optical filter so as to sense a temperature of the optical filter, and a signal representative of the temperature sensed by the second temperature sensing unit is used to correct the signal outputted from a wavelength monitoring device. Moreover, the wavelength monitoring device is configured to monitor a wavelength of the laser beam and output a signal associated with the monitored light. This wavelength monitoring device is in contact with the wavelength regulating unit, which regulates the wavelength of the laser beam that is output from a light emitting device based on the signal from the wavelength monitor device.

The present inventors recognized that wavelength characteristics may be shifted toward shorter wavelengths due to a temperature characteristic of the optical filter after a predetermined time has passed (specification, page 13, lines 26-28). Furthermore, the present inventors recognized that it is possible for the optical fiber to perform a better job of wavelength locking without changing the wavelength in its initial state by monitoring the temperature characteristic of the optical fiber and then outputting an appropriate correction

voltage depending on the sensed temperature to be fed back to a control unit (specification page 13, line 30 through page 40, line 1).

The outstanding Office Action asserts Sato as containing all the elements of independent Claim 1. Claim 1 has been amended nevertheless, to emphasize the differences between amended Claim 1 and Sato. Figure 10 in Sato describes an automatic frequency control (AFC) circuit which includes a filter film 30, a first temperature sensing unit 36 and a second temperature sensing unit 9. The first temperature sensing unit 9 provides feedback to a electronic cooler that cools laser device 1 (see e.g., col. 8, lines 1-5). The second temperature-sensing unit 36, detects of temperature of the filter film 30 and provides a current to a second electronic cooler 40 so that the temperatures of a first band pass filter film 20 and a second filter film 30 are controlled to be kept constant (col. 10, lines 21-31).

Comparing amended Claim 1 with Sato, amended Claim 1 requires that the signal of the temperature sensed by the second temperature sensing unit (which is disposed adjacent to the optical filter) is used to correct the signal outputted from the wavelength monitor device. In contrast, Sato applies the signal output from the ATC circuit 80 directly into a cooler 40, and it is not input to the AFC circuit 81. Accordingly, this signal that is output from the ATC circuit 80 is not used to correct the control signal output from the AFC circuit 81.

Therefore, Sato neither teaches nor suggests nor discloses all of the features of independent Claim 1, and therefore does not anticipate amended Claim 1. As Claims 2-17 and 19 dependent from amended Claim 1, it is also respectfully submitted that these dependent claims also patentably define over Sato. For substantially the same reasons set forth above with regard to Claim 1, it is respectfully submitted that independent Claim 21, 34, 36, 40, 44 and 48 also patentably define over the asserted prior art. Also, the claims that dependent from these independent claims are also believed to patentably define over the asserted prior art.

Claims 18, 20 and 30, all dependent claims, were rejected as being unpatentable over Sato. The basis of the rejection was that Sato allegedly discloses all the features of the independent claims, but fails to teach an otherwise obvious element contained in Claims 18, 20 and 30.

In reply, it is believed that because the independent claims have been amended as discussed above, that dependent Claim 18, 20 and 30 patentably define over Sato. Moreover, it is respectfully submitted that Sato neither teaches or suggests the features discussed above with regard to the temperature sensed by the second temperature sensing unit being used to correct the signal output from the wavelength monitor device. Accordingly, it is believed that Claims 18, 20 and 30 patentably define over Sato.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claim 1-51, as amended, patentably define over the asserted prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

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